

KS4 curriculum map

	<u>Topic</u>	<u>Key concept – what do I want the students to learn from this unit?</u>	<u>What knowledge will they acquire?</u>
<b>Y11 - half term 1</b>	Number Probability Algebra Geometry Level 2 further Maths	Algebraic manipulation. Pythagoras' Theorem and Trigonometry. Probability. Angle properties. Solving linear equations. Rounding and limits.	Construct algebraic proofs. Expand three binomials. Factorising quadratics. Expanding two binomials. Calculating a missing side in a right-angled triangle using Pythagoras' theorem in 3D Calculating a missing side or angle in a right angled triangle using trigonometry. Using the Sine and Cosine rules for non-right-angled triangles. Know exact values of specific trig. values. Use and construct Venn diagrams. Calculate and interpret relative frequency. Use and construct tree diagrams. Understand and use bearings. Use circle theorems to find missing angles. Solving equations with unknowns on both sides. Solving inequalities. Solving equations with fractions. Describe and identify regions described using inequalities. Solve quadratic inequalities. Find the limits of accuracy of a rounded number. Calculate and solve problems using bounds. Estimate the value of a calculation. Use binomial expansion for a binomial raised to power greater than 2. Understand and use factor theorem. Solving trigonometric equations.

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<b>Y11 – half term 2</b>	Geometry Number Algebra Level 2 Further Maths	Formulae. Factors, Powers and roots. <b><u>Simultaneous equations.</u></b> <b><u>Transformations and vectors.</u></b> Trigonometry	Modelling using formulae. Setting up and using formulae based on proportion. Understand and use negative indices. Use and manipulate surds. <b><u>Solve a pair of simultaneous equations graphically.</u></b> <b><u>Solve a pair of simultaneous equations algebraically.</u></b> <b><u>Solve a pair of simultaneous equations where one is quadratic or a circle.</u></b> <b><u>Perform and recognise enlargements with and without a centre of enlargement.</u></b> <b><u>Perform enlargements with fractional and negative scale factors.</u></b> <b><u>Understand the links between the measures in 2D and 3D shapes.</u></b> <b><u>Understand and use the properties of congruent triangles.</u></b> Solving trigonometric equations.
<b>Y11 – half term 3</b>	Handling data Algebra Geometry L2 Further Maths	Handling data <b><u>Linear functions.</u></b> Measures. Solving quadratic equations. Calculus. Circles. Matrices	Drawing and analysing histograms. Calculating how to perform stratified sampling. <b><u>Plotting lines of the form <math>ax + by = c</math>.</u></b> <b><u>Understand the properties of parallel lines.</u></b> <b><u>Understand the links between lines that are perpendicular.</u></b> Understand and use compound units Solving quadratic equations where $a=1$ or is greater than 1. Use the quadratic formula to solve quadratic equations. Use completing the square to solve a quadratic. Differentiation. Understanding the equation of a circle. Calculate with matrices. Know the transformation matrices.

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<b>Y11 – half term 4</b>	Algebra Geometry L2 Further Maths	Using and manipulating formulae. Shapes and constructions. Linear functions. Trig identities.	Substituting into formulae. Deriving formulae. Rearranging formulae. Modelling using formulae. Setting up and using formulae based on proportion. Drawing constructions accurately. Drawing the loci of points from a given set of constraints. Drawing and interpreting real life graphs. Plotting lines of the form $ax + by = c$ . Understand the properties of parallel lines. Understand the links between lines that are perpendicular. Understanding and using Trig identities. Solving trig equations and listing all solutions in a given region.
<b>Y11 – half term 5</b>	Algebra	<u>Non-linear functions</u> Targeted Revision – students will be taught topics that have been identified through target homework's and pre-public examinations. Students attend revision sessions as well as maths lessons.	<u>Recognise and perform graph transformations.</u> <u>Equations of a circle and a tangent to a circle.</u> <u>Plot and understand the properties of reciprocal graphs.</u> <u>Plot and understand the properties of trigonometric graphs.</u> <u>Plot and understand the properties of velocity time graphs.</u>
<b>Y11 – half term 6</b>	Targeted Revision – students will be taught topics that have been identified through target homework's and pre-public examinations. Students attend revision sessions as well as maths lessons.  GCSE Exams		